# The Boston Economy

# 1985

CITY OF BOSTON
RAYMOND L. FLYNN, MAYOR

BOSTON REDEVELOPMENT AUTHORITY
STEPHEN COYLE, DIRECTOR

THE BOSTON ECONOMY
1985

Jeffrey Brown,
Alexander Ganz and
Gregory Perkins

Boston Redevelopment Authority
Research Department

March 1985

EXECUTIVE SUMMARY

As of Spring 1985, the economic outlook for the City of Boston is bright. Key measures of the economic health of the New England region and the City of Boston point to an outstanding year and good prospects for the rest of the decade. In particular, rising capital investment, expanding job openings, and relatively low unemployment rates indicate burgeoning economic strength.

Positive signs abound. The most striking element is the construction of millions of square feet of office, hotel, retail, industrial and residential space. Private development completions reached an all-time high in 1984, and development scheduled for the next several years should sustain the expansion and transformation of the City's economic base. In addition, the beginnings of a revival in urgently needed City public infrastructure investment lends further support to the outstanding prospects for the City's economy. As a consequence, Boston's investment rate (public and private investment as a percent of the City's production of goods and services), in 1984, and the 1985-87 years, will handily exceed that of any recent historic period in the City.

The City of Boston is the regional economic center of New England. Boston and its metropolitan area spark economic activity in the region and respond to regional economic trends. Since 1976, the economies of the region and its major city and metropolitan area have performed exceptionally well as generators of jobs and income. Recovering smartly from the employment lag of the early 1970s, New England and the Boston area weathered the recessions of the early 1980s with relatively low unemployment rates and achieved better-than-average growth in employment and per capita personal income. Substantial structural change in the City and region in the last two decades, favoring business and professional services, higher education and medicine, finance and high-tech industry, set the stage for the economic expansion that has been most evident in the last eight years. Employment in Boston increased by 20,000 jobs, in 1984, and 80,000 jobs since 1976.

Boston, as a place to live, and the quality of life in the City, are also making progress, though there is much room for improvement. Population has declined since 1970, while the number of households has remained stable, with losses of blue collar workers and their families, and gains of young, middle-class adults and minorities. There were important advances in educational attainment and in the occupational skills of the labor force. There has been a revival in cultural facilities. Innovative public services for the elderly and youth, and health services thrive at a leaner level. Income levels reflect the effects of inflation, student households, and the rise in minorities which now make up almost one-third of Boston's population.

An increase in the housing stock was accompanied by a broad improvement in condition, through new construction, demolition, conservation and rehabilitation. A notable upturn in housing demand and values, responding to the surge in baby-boom household growth and the expansion of jobs since 1976, resulted in housing scarcity and pressure on rentals.

Neighborhoods that were in decline showed visible signs of improvement. The City's expanding job opportunities generated an expanding flow of income. Job capture was aided by measures fostering advances in education, manpower training, and health. A range of initiatives in housing fix-up and public improvements enhanced livability. More equitable tax assessing, as a consequence of revaluation and classification, encouraged investment in housing. Much remains to be done in many City neighborhoods, nevertheless. These positive trends provide some of the elements of an important potential for neighborhood economic development. An ambience of progress towards the amelioration of racial tensions has emerged.

Under the mandate of the 1980 state law on tax limitation (Proposition 2½), and federal aid cutbacks, Boston City government is lean. Municipal government employment was substantially reduced in 1981. Even with a partial recovery in 1983 (which is being pared in 1984), City government is at about the same employment level as in 1948. A one-third decline in property tax revenue, between fiscal years 1983 and 1984, was offset in large part by an increase in state aid. Beginning with FY1985, Boston's property tax revenue will rise by the allotted 2½ percent plus the effect of the new private development investment on the expansion of the taxable property base. A need for new revenue persists. City administration priorities center on addressing neighborhood concerns and working toward linking downtown development and neighborhood improvement.

INTRODUCTION

This report provides a profile of Boston's economy for planners, public officials, the business community, scholars and interested citizens. Findings related to jobs, income, population, labor force and businesses, public and private investment in the City and the City's neighborhoods are outlined.

"Recent Economic Trends and Prospects", Part I, covers the City's economic role in a regional context, employment structure and trends, and prospects for growth in the 1980s. "Investment", Part II, deals with private development and public infrastructure. Part III, "People and Neighborhoods" describes population, labor force and income, housing characteristics, and the make-up of Boston's neighborhoods. "City Government", Part IV, reviews public sector trends. In depth analytic information on each of these topics is available in a series of related reports (see references). (These reports were never written according to Jeffrey Brown, 1 Sept. 198[illegible])

# I. RECENT ECONOMIC TRENDS AND PROSPECTS

# I. RECENT ECONOMIC TRENDS AND PROSPECTS OF THE BOSTON ECONOMY

## City's Role in the Region and the State

### Employment and Income

More evidence of the strength of the regional and metro area economies and that of the City of Boston emerged in 1983. The economic recovery last year brought improvement in the nation. New England employment grew by 1.6 percent in 1983, or more than that of the rebounding national economy (1.3 percent). Per capita personal income in New England increased 7.4 percent, from 1982 to 1983, 2.2 percentage points more than nationally, representing the largest increase of the nation's regions.

In the years since 1976, New England had surpassed the national average in certain measures of economic growth according to data compiled by the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis. Employment in New England had grown 14.3 percent from 1976 to 1983 compared to a 13.6 percent gain for the nation (see Table 1). The regional unemployment rate had fallen below the nationwide rate in 1978 for the first time in ten years, and had continued at a lower level since then. In addition, New England had had the largest increase in per capita personal income among the nation's regions in the 1980-1983 period.

The national recession during 1981 and 1982 had brought a pause in economic growth in New England, yet the region maintained comparatively favorable economic conditions. Strong job growth in a broad range of services offset job losses in manufacturing, as New England employment increased by 0.8 percent from 1980 to 1982. The corresponding change in

the nation was +2.2 percent. And regional employment growth resumed in 1983.

The economic performance of Massachusetts matched regional trends. Employment rose by 12.5 percent in the state during the 1976-83 period, including a gain of 1.9 percent over 1980-1982. Employment increased slightly (0.7 percent) in 1983, and rebounded with a strong first quarter 1983-84 rise of 4.4 percent. In terms of personal income growth, Massachusetts ranked ninth among all states for the 1980-83 period, and eighth in 1982-1983 gains.

The economy of the Boston metropolitan area, of which the City is the center, performed comparatively well during the national recession, and bloomed in 1983, although the metro area had virtually no job growth during the during the 1980-82 period (0.2 percent). During 1983, the Boston metropolitan area expanded its employment by 23,000 (or 1.6 percent).

The City of Boston recorded substantial growth in employment after the severe recessions of the early- and mid-1970s. From 1976 to 1983, the Boston economy expanded by 58,000 jobs or nearly twelve percent (see Table 2). Business and professional services, health and higher education, and finance and insurance led the growth, while manufacturing and wholesale trade declined. Preliminary data indicate that the City's employment grew by about two percent during 1983.

Boston's gain of 58,000 jobs, from 1976 to 1983, was centered principally in the broad range of services activities (40,000) and finance (15,000), supplemented by more modest gains in government (4,400), transportation and communication (3,000), construction (1,900) and retail trade (1,800). See Table 2. There were net losses in

Table 1

TRENDS IN NON-AGRICULTURAL WAGE AND SALARY EMPLOYMENT AND PERSONAL INCOME, 1976-1983

A. Annual Average Change (in percent)

Non-Agricultural Wage and Salary Employment (in percent)

| Year | City of Boston | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976-1983 | 1.6% | 2.4% | 1.7% | 1.9% | 1.8% |
| 1980-1983 | .7% | .6% | .9% | .8% | .5% |
| 1982-1983 | 2.0% | 1.6% | .7% | 1.6% | 1.3% |

Per Capita Personal Income (in percent)

| Year | City of Boston** | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976-1983 | 10.1% | 10.4% | 10.0% | 11.1% | 9.0% |
| 1976-1980 | 11.2% | 11.2% | 10.8% | 12.8% | 10.5% |
| 1980-1982 | 9.2% | 10.2% | 9.8% | 9.4% | 8.1% |
| 1982-1983 | 7.7%*** | 7.7%*** | 7.7% | 7.4% | 5.2% |

B. Percent Change

Non-Agricultural Wage and Salary Employment (in percent)

| Year | City of Boston | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976-1983 | 11.6% | 18.2% | 12.5% | 14.3% | 13.6% |
| 1980-1983 | 2.0% | 1.8% | 2.6% | 2.4% | 1.5% |
| 1982-1983 | 2.0% | 1.6% | .7% | 1.6% | 1.3% |

Per Capita Personal Income (in percent)

| Year | City of Boston** | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976-1983 | 96.2% | 100.1% | 95.4% | 108.3% | 83.4% |
| 1976-1980 | 52.7% | 52.9% | 50.6% | 62.0% | 49.3% |
| 1980-1982 | 19.3% | 21.5% | 20.5% | 19.7% | 16.8% |
| 1982-1983 | 7.7%*** | 7.7%*** | 7.7% | 7.4% | 5.2% |

Table 1 (continued)

C. Absolute Numbers

Non-Agricultural Wage and Salary Employment (in thousands)

| Year | City of Boston* | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976 | 501 | 1,269 | 2,473 | 5,200 | 88,752 |
| 1980 | 548 | 1,474 | 2,711 | 5,803 | 99,303 |
| 1982 | 548 | 1,477 | 2,763 | 5,849 | 99,526 |
| 1983 | 559 | 1,500 | 2,781 | 5,943 | 100,834 |

Per Capita Personal Income (in current dollars)

| Year | City of Boston** | Boston Metro Area | Massachusetts | New England | United States |
|---|---|---|---|---|---|
| 1976 | $6,078 | 7,043 | 6,698 | 6,166 | 6,367 |
| 1980 | 9,284 | 10,770 | 10,089 | 9,989 | 9,503 |
| 1982 | 11,072 | 13,087 | 12,153 | 11,958 | 11,100 |
| 1983 | 11,925*** | 14,095*** | 13,089 | 12,845 | 11,675 |

* Boston Employment Series is total (BEA) rather than wage and salary employment (BLS).

** Per Capita Income for Boston is from Suffolk County.

*** Estimated.

Source: U.S. Department of Labor, Bureau of Labor Statistics and U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 2

CITY OF BOSTON EMPLOYMENT, 1976-1983

SELECTED YEARS AND CHANGE BY INDUSTRY

| INDUSTRY | 1976 | 1977 | 1980 | 1981 | 1982 | 1983 | CHANGE 1976-1983 NUMBER | PERCENT |
|---|---|---|---|---|---|---|---|---|
| AGRI.MINING | 791 | 617 | 563 | 499 | 547 | 566 | - 225 | -28.4 |
| CONSTRUCTION | 9,003 | 7,914 | 10,163 | 10,365 | 10,445 | 10,346 | 1,343 | 14.9 |
| MANUFACTURING | 53,385 | 53,763 | 51,861 | 50,811 | 49,685 | 46,989 | - 6,396 | -12.0 |
| TRANSPORTATION-PU. | 34,131 | 32,982 | 36,660 | 37,276 | 36,120 | 39,514 | 5,383 | 15.8 |
| WHOLESALE TRADE | 29,619 | 29,827 | 27,399 | 27,420 | 25,051 | 26,028 | - 3,591 | -12.1 |
| RETAIL TRADE | 55,008 | 54,849 | 55,628 | 55,670 | 55,197 | 56,522 | 1,514 | 2.8 |
| FINANCE-INS-RE | 62,229 | 63,366 | 70,451 | 74,436 | 76,584 | 76,245 | 14,016 | 22.5 |
| SERVICES | 160,902 | 161,988 | 187,991 | 190,249 | 193,602 | 199,017 | 38,115 | 23.7 |
| HOTEL | 4,144 | 4,698 | 6,495 | 6,018 | 6,389 | 6,568 | 2,424 | 58.5 |
| MEDICAL | 51,045 | 52,388 | 58,524 | 59,617 | 60,985 | 62,690 | 11,645 | 22.8 |
| EDUCATIONAL | 21,169 | 23,891 | 29,222 | 29,884 | 30,008 | 30,848 | 9,679 | 45.7 |
| CULTURAL | 4,834 | 4,786 | 4,800 | 4,777 | 4,840 | 4,975 | 141 | 2.9 |
| SOCIAL-NONPROFIT | 16,360 | 17,300 | 20,036 | 19,913 | 20,135 | 20,698 | 4,338 | 26.5 |
| BUSINESS | 27,373 | 28,789 | 33,808 | 33,722 | 34,461 | 35,425 | 8,052 | 29.4 |
| OTHER | 35,977 | 30,136 | 35,106 | 36,317 | 36,784 | 37,813 | 1,836 | 5.1 |
| GOVERNMENT | 85,048 | 85,882 | 96,017 | 94,683 | 89,142 | 91,717 | 6,669 | 7.8 |
| PROPRIETORS | 10,560 | 10,860 | 11,764 | 12,133 | 12,070 | 12,699 | 2,139 | 20.3 |
| TOTAL ALL SECTORS | 500,676 | 502,048 | 548,497 | 553,542 | 548,444 | 559,643 | 58,967 | 11.8 |

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY, ES-202 SERIES;
U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, UNPUBLISHED SERIES;
BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS.

08.07.84 JPB

manufacturing (-6,000), and wholesale trade (-3,600). Employment in the City had expanded notably in the 1976-81 period, was set back modestly with the 1982 recession, and surged ahead in 1983. The growth in services activities throw light on the Boston phenomena. Medical and hospital service rose by 12,800, higher education by 10,000, and business services by 9,800. Increases occurred also in hotel service (2,500), and social nonprofit and cultural activities (4,200). Job growth in Finance responded to the expansion of banking, money management and insurance activities, with the rise in interest rates and the revival of the asset management markets. There was a net gain in government employment over the seven-year period, despite a curtailment of public employment since 1980 as a consequence of tax limitation legislation impacting cities and towns, and cutbacks in state government employment.

### Employment Structure

Boston's relative improvement in economic performance reflected extensive structural change in the City and metropolitan economies. A transformed economic base, driven by knowledge, information and high technology industries, now generates most of the Boston area's employment and income. Between 1950 and 1983, Boston's services activities, including transportation, communication, public utilities, finance, insurance, and business and professional services expanded their share of the City's total employment from 32 percent to 56 percent, while the manufacturing and trade shares declined to 9 percent and 15 percent respectively (see Table 3).

Table 3

COMPOSITION OF EMPLOYMENT IN BOSTON
(In Percent)

| | 1950 | 1983 |
|---|---|---|
| Manufacturing | 19 | 9 |
| Services (Transportation, Communication, and Public Utilities, Finance and Insur., Business and Professional Serv.) | 32 | 56 |
| Trade | 27 | 15 |
| Government | 15 | 16 |
| Construction and Other | 7 | 4 |
| TOTAL | 100 | 100 |

Sources: U.S. Bureau of Economic Analysis, Mass. Department of Employment Security, Boston Redevelopment Authority.

Table 4

EMPLOYMENT AND POPULATION ROLE OF THE CITY AND THE BOSTON METROPOLITAN AREA IN THE NEW ENGLAND REGION, 1982

| | 1982 Employment In Services | 1982 Employment Total | 1980 Population |
|---|---|---|---|
| | | (Thousands) | |
| City of Boston | 193 | 548 | 563 |
| Boston Metropolitan Area | 438 | 1,467 | 2,763 |
| New England Region | 1,284 | 5,444 | 12,325 |
| | | (In Percent) | |
| City as Share of Metro Area | 44% | 37% | 20% |
| Metro Area as Share of New England Area | 34 | 27 | 22 |

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, Massachusetts Department of Employment Security, Boston Redevelopment Authority.

Employment in services activities has been the most rapidly expanding sector of national and New England employment since before 1970. Boston's growing services activities respond to metro area, New England region and national market demand. The region's fast-growing high-technology industry relies heavily on Boston's business, professional and finance services, and the role of the City's colleges and universities. In 1982, the City accounted for 44 percent of the metropolitan area's services employment, and the metropolitan area had a 34 percent share of the New England region's services employment (see Table 4). The extensive bases of services activities in the City and the metropolitan area contributed substantially to the region's overall gain of 900,000 jobs between 1970 and 1983. The growth of the high technology industry, business and professional services, higher education and medicine has made the economies of New England and the City of Boston more diversified and less vulnerable to significant cyclical downturns.

Unemployment Rate

The structural transformation of the City and regional economies contributed to relative improvement in unemployment trends. Most notably, the positions of Boston and its metro area have reversed since 1977 in relation to that of the United States (see Table 5). In the national recession year of 1975, unemployment rates had soared to over 12 percent in the City and over 10 percent in the metropolitan area. After 1977, unemployment rates of Boston and the metro area were progressively less than the national rates. For the City, annual rate of unemployment dropped a full point below the national rate in 1980

Table 5

UNEMPLOYMENT RATES FOR BOSTON,
AND COMPARISONS WITH THE METRO AREA, STATE, REGION AND NATION
SELECTED YEARS, 1970 TO 1984
(IN PERCENT)

| YEAR | BOSTON CITY | BOSTON METRO AREA | MASSACHUSETTS | NEW ENGLAND | UNITED STATES |
|---|---|---|---|---|---|
| 1970 | 4.9 | 4.0 | 4.6 | 4.9 | 4.9 |
| 1975 | 12.8 | 10.5 | 11.2 | 10.3 | 8.5 |
| 1977 | 9.5 | 7.8 | 8.1 | 7.6 | 7.0 |
| 1979 | 6.5 | 5.2 | 5.5 | 5.4 | 5.8 |
| 1980 | 6.1 | 5.0 | 5.6 | 5.9 | 7.1 |
| 1981 | 7.0 | 5.7 | 6.3 | 6.3 | 7.6 |
| 1982 | 9.1 | 6.7 | 7.9 | 7.8 | 9.7 |
| 1983 | 7.8 | 5.8 | 6.9 | 6.8 | 9.6 |
| OCT. 1983* | 7.7 | 5.6 | 6.4 | 5.8 | 8.4 |
| OCT. 1984* | 4.1 | 3.1 | 3.4 | NA | 7.4 |

--------------

* NOT SEASONALLY ADJUSTED

SOURCES: U.S. BUREAU OF LABOR STATISTICS; MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY.

JPB 1.4.85

and has remained well under the national average through March 1984, the latest date for which information was available at the time of the preparation of this report..

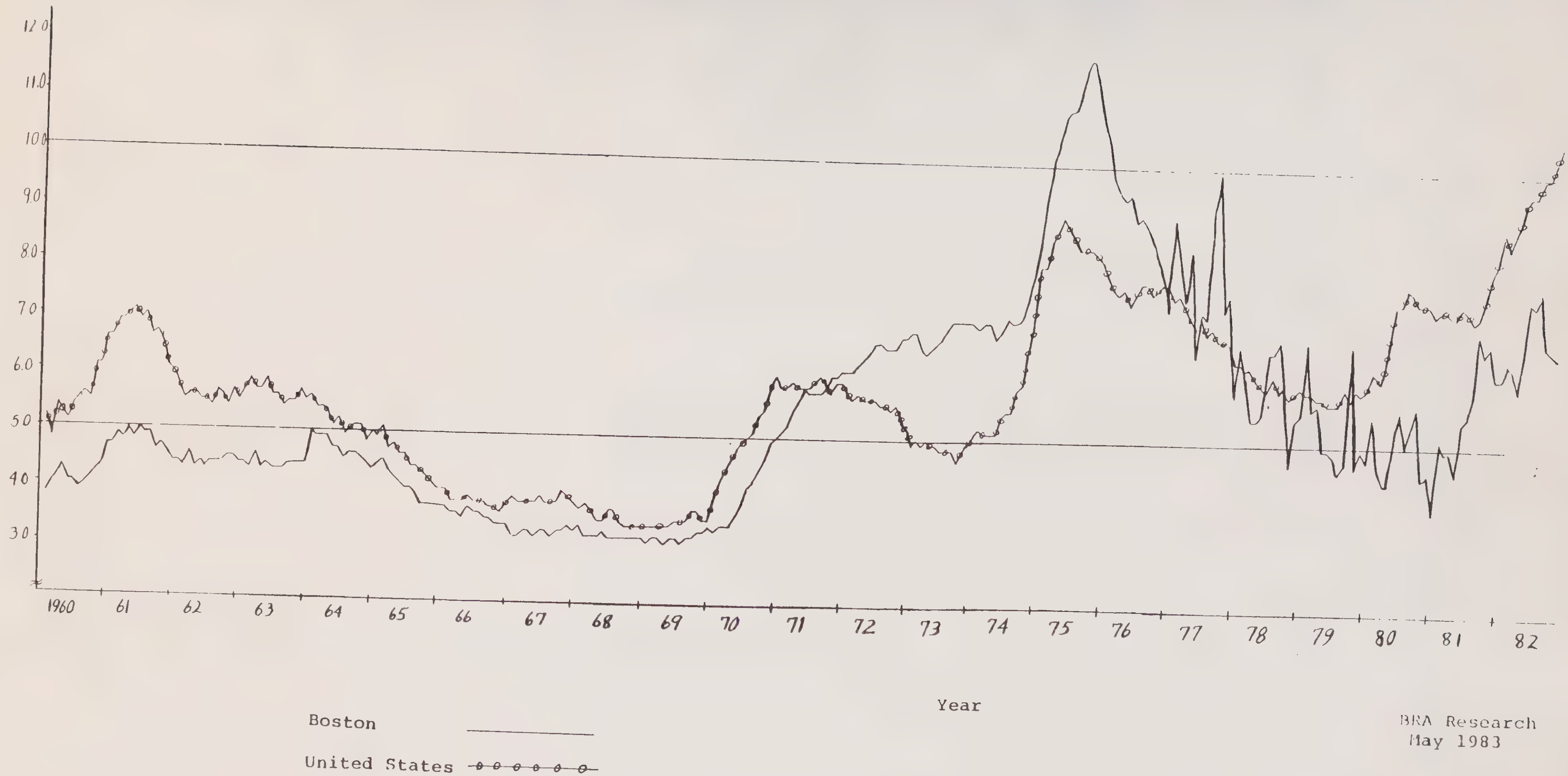
An analysis of short-term trends in unemployment rates and number of employees sheds light on changes in Boston and the metro area economy. During the 1960s, the Boston area's monthly unemployment rates were consistently below national rates (see Figure 1). The national contraction and restructuring of the first half of the 1970s hit the Boston area especially hard as employment in the older, non-durable goods manufacturers declined sharply. The Boston area's unemployment rate rose above the national rate in 1971 and continued to rise in 1975 after the national rate began to descend.

The Boston area recovered from the severe setback of 1970-75 to exceed the national growth rate in employment from 1976 to 1983. Monthly metro area unemployment rates dipped below national rates in 1976 and have stayed well under the nation's average since then. The difference between the metro area and national unemployment rates ranged from 2.7 to 4.5 percentage points during 1983 (not seasonally adjusted). In March 1984, the Boston area's rate was 4.8 percent or fifth lowest among the 31 large metropolitan areas for which information was available (see Table 6).

Although recent trends are positive, by any objective measure, unemployment rates are still too high, especially for minorities and youth. The 1980 Federal Census reported a minority unemployment rate at forty-four percent above the City average, and a youth unemployment rate at twice the average for the City.

FIGURE 1

MONTHLY UNEMPLOYMENT RATES, BOSTON AND THE UNITED STATES




BRA Research
May 1983

Table 6

UNEMPLOYMENT RATES
IN THE NATION'S LARGEST METROPOLITAN AREAS
(in percent)

| Metropolitan Area | Annual Average 1981 | Annual Average 1982 | March 1983 | March 1984 |
|---|---|---|---|---|
| **Sunbelt** | | | | |
| Atlanta | 5.4 | 6.4 | 7.1 | 5.1 |
| Dallas | 4.6 | 5.7 | 5.8 | 3.9 |
| El Paso | 9.1 | 11.1 | 13.3 | 10.0 |
| Houston | 4.1 | 6.5 | 10.0 | 7.3 |
| Jacksonville | 5.9 | 7.0 | 8.2 | 5.3 |
| Los Angeles | 6.9 | 9.3 | 10.1 | 7.9 |
| New Orleans | 7.8 | 9.3 | 11.2 | 7.9 |
| Phoenix | 5.1 | 7.9 | 8.1 | 4.2 |
| San Antonio | 5.7 | 6.4 | 6.8 | 5.1 |
| San Diego | 6.9 | 9.3 | 9.8 | 6.7 |
| San Jose | 5.9 | 7.5 | 8.4 | 5.7 |
| **Industrial** | | | | |
| Buffalo | 9.5 | 12.6 | 13.6 | 10.7 |
| Chicago | 8.2 | 10.6 | 11.4 | 9.6 |
| Cincinnati | NA | 10.5 | 11.9 | NA |
| Cleveland | 8.5 | 10.7 | 12.6 | 9.9 |
| Detroit | 13.0 | 15.9 | 17.1 | NA |
| Indianapolis | 8.3 | 9.4 | 10.9 | NA |
| Milwaukee | 7.4 | 10.5 | 12.7 | 7.3 |
| Newark | 7.2 | 8.7 | 8.5 | 6.9 |
| Philadelphia | 7.5 | 8.6 | 9.6 | 7.0 |
| Pittsburgh | 7.5 | 12.3 | 16.2 | 11.8 |
| St. Louis | 8.5 | 9.9 | 11.5 | 9.7 |
| **Broad-Based Services** | | | | |
| Baltimore | 8.4 | 9.9 | 9.3 | 6.3 |
| BOSTON | 5.9 | 6.7 | 6.6 | 4.8 |
| Columbus | 7.7 | 8.9 | 9.5 | 8.1 |
| Denver | 4.8 | 6.6 | 6.4 | 4.3 |
| Kansas City | 6.7 | 8.1 | 9.9 | 6.5 |
| Memphis | 8.2 | 9.7 | 10.7 | 8.2 |
| Minneapolis-St. Paul | 4.4 | 6.4 | 8.1 | 5.1 |
| Nashville | 6.9 | 8.8 | 9.4 | 6.0 |
| New York | 8.3 | 8.9 | 10.1 | 7.8 |
| San Francisco-Oakland | 6.1 | 8.2 | 8.4 | 6.8 |
| Seattle | 7.8 | 10.3 | 11.0 | 8.7 |
| Washington, D.C. | 4.9 | 5.8 | 5.7 | 4.5 |
| United States | 7.6 | 9.7 | 10.8 | 7.8 |

Source: U.S. Department of Labor, Bureau of Labor Statistics, May 15, 1984. Monthly rates are not seasonally adjusted.

Metro Region City and Town Dependency on Working in Boston

With a population of 563,000 and with 548,000 jobs in 1980, the census year, the City had the second highest ratio of jobs to population of any of the nation's thirty largest cities, surpassed only by Washington, D.C. The high ratio of jobs to population indicates that the City provides a direct source of employment and income for an area which extends beyond its borders and the Boston metropolitan area.

The 1980 Journey-to-Work information (U.S. Census Bureau) provides more evidence of the dependence of metro region cities and towns on the Boston economy. According to the survey of work destinations, 59 percent of the workers in Boston were residents of suburban cities and towns. Most of those workers lived in the inner suburbs, but substantial numbers of workers commuted to Boston from cities and towns throughout Eastern Massachusetts, highlighting the dependence of suburban cities and towns on the Boston economy for jobs and income. For seven cities and towns, the share of resident workers working in Boston ranged from 30 to 50 percent (see Table 7).

Table 7

COMMUTING PATTERNS TO BOSTON, 1980
NUMBER OF WORKERS AND PERCENT WORKING IN BOSTON
TOP SEVEN CITIES AND TOWNS RANKED BY PERCENT

| City or Town | All Workers | Working in Boston | Working in Boston As a Percent of All Workers |
|---|---|---|---|
| Brookline | 29,177 | 15,338 | 49.5 |
| Revere | 18,842 | 7,962 | 38.4 |
| Quincy | 40,820 | 15,694 | 35.9 |
| Newton | 42,208 | 13,830 | 31.0 |
| Dedham | 12,393 | 3,959 | 30.1 |
| Medford | 26,789 | 8,678 | 30.0 |
| Everett | 16,141 | 5,355 | 30.0 |

Source: U.S. Bureau of the Census, Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, Massachusetts, PHC80-3-23; Place of Work Destinations 1980, Summary Tape File 4.

## Boston As the Nation's Preeminent Services Activities Center

### Role of Services in the Nation's Large Cities

Among the nation's large cities, Boston is preeminent in the extent of structural change and in the relative importance of the rapidly growing services sector (transportation, communication and public utilities, finance and insurance, business and professional services, health and higher education). The share of Boston's employment in services activities increased from 44 percent, in 1969, to 54 percent, in 1980, in comparison with a growth, for the nation's 34 largest cities, from 34 percent, in 1969, to 38 percent, in 1980 (see Table 8). The comparable shares for the nation as a whole were 28 percent in 1969 and 31 percent in 1980. As the leading modern services activity center of the nation, Boston's ranking was followed by that of San Francisco, New York, New Orleans, Philadelphia, St. Louis, Denver, Newark, Atlanta and Baltimore (see Table 9).

Private services were the largest source of employment growth in Boston and the nation's large cities. From 1969 to 1980, private services in the nation's large cities expanded by 26 percent while all other sectors, including manufacturing, trade, construction, and government, grew by only 4 percent. Overall employment growth had averaged 11 percent. In the 1980s, private services continues to make up most of the new jobs in urban areas, including Boston.

### Export Role of Boston's Services Activities

A traditional source of employment for export--manufacturing--plays a diminishing role in Boston's economy. Boston's employment outlook is

Table 8

DISTRIBUTION OF EMPLOYMENT BY BROAD INDUSTRY GROUPS
(As a Percent of Total Employment)

| | Manufacturing and Trade | | Private Services* | |
|---|---|---|---|---|
| | 1969 | 1980 | 1969 | 1980 |
| Boston | 35 | 26 | 44 | 52 |
| 34 Large Cities | 45 | 41 | 34 | 38 |
| United States | 46 | 43 | 28 | 31 |

* Private services include three 1-digit SIC categories: Transportation and Public Utilities; Finance, Insurance and Real Estate; and Services (Business, Professional, Health and Higher Education).

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Table 9

ROLE OF SERVICES ACTIVITIES IN THE NATION'S LARGE CITIES:
PRIVATE SERVICES EMPLOYMENT AS A PERCENT OF
TOTAL NON-FARM WAGE AND SALARY EMPLOYMENT,
TOP 10 OF 34 LARGE CITIES, 1980

| Cities | Total Employment By Place Of Work | Employment In Private Services* | Private Services As a Percent of Total Employment | Rank |
|---|---|---|---|---|
| Boston | 557,597 | 300,338 | 52 | 1 |
| San Francisco | 593,319 | 305,361 | 51 | 2 |
| New York | 3,439,222 | 1,702,666 | 49 | 3 |
| New Orleans | 342,850 | 153,238 | 45 | 4 |
| Philadelphia | 813,821 | 356,991 | 44 | 5 |
| St. Louis | 382,179 | 164,772 | 43 | 6 |
| Denver | 437,862 | 185,376 | 42 | 7 |
| Newark | 395,828 | 162,593 | 41 | 8 |
| Atlanta | 761,307 | 307,130 | 40 | 9 |
| Baltimore | 484,435 | 196,617 | 40 | 10 |
| 34 Cities Total | 28,226,920 | 10,754,598 | 38 | |
| United States | 95,298,000 | 29,819,000 | 31 | |

promising, nevertheless, because the City exports health and educational services, business and professional services and finance and insurance to regional, national and international markets. In comparison with fourteen other large cities, Boston had the largest relative export role in services (see Table 10).

### Boston's Business Establishments and the Role of Services Activities

Private business establishments in Boston provided over 80 percent of all jobs in the City in 1982; (government and social nonprofit agencies accounted for 16 percent and 4 percent of total employment, respectively). In that year, Boston's 16,550 business establishments employed 446,000 workers. See Table 11. Detailed information on Boston's businesses and their employees, in 1982, recently published by the U.S. Bureau of the Census, in their "County Business Patterns" series, sheds extraordinary light on Boston's economic structure, especially on services activities. Improved statistical reporting coverage highlights the significance of the national services "revolution" in Boston.

In 1982, 6,396 services businesses in Boston had 189,569 employees, or 42 percent of all private employment in the City.

Health services dominated with 54,317 workers (12 percent of private employment) including 49,194 workers in 28 hospitals, 83 nursing and personal care facilities and 42 outpatient facilities. Doctor and dentist offices (755) and laboratories made up the remainder. Boston's hospitals serve a regional, national and international clientele.

Business services followed in importance, with 1,120 establishments and 32,532 workers (7 percent of the total), including concentrations in

Table 10

EXPORT AND IMPORT ROLES IN SERVICES ACTIVITIES
BOSTON AND 14 OTHER LARGE CITIES
PERCENT OF EMPLOYMENT REPRESENTING EXPORTS (+) OR REFLECTING IMPORTS (-)

| Large Cities | Services* | |
|---|---|---|
| | 1969 | 1980 |
| Boston | 28.3 | 40.7 |
| Sunbelt | | |
| Atlanta | 16.2 | 13.3 |
| Houston | 15.7 | 2.7 |
| Los Angeles | 12.6 | 15.6 |
| New Orleans | 29.7 | 24.1 |
| Phoenix | 6.1 | 0.9 |
| Industrial | | |
| Chicago | -2.4 | 3.3 |
| Cleveland | -5.7 | 6.7 |
| Detroit | -5.4 | 6.8 |
| Philadelphia | 16.0 | 29.4 |
| St. Louis | 20.9 | 26.5 |
| Broad-Based Services | | |
| Denver | 10.3 | 15.3 |
| New York | 22.7 | 28.2 |
| San Francisco | 19.5 | 26.4 |
| Washington, D.C. | 33.1 | 33.1 |

* Business and Professional Services, Health and Higher Education.

Source: U.S. Department of Commerce, Bureau of Economic Analysis (Location Quotient Analysis).

Table 11

BUSINESS ESTABLISHMENTS AND EMPLOYEES BY DETAILED INDUSTRIES
SUFFOLK COUNTY (BOSTON), 1982*

| SIC Code | Industry | Establishments | | Employees | |
|---|---|---|---|---|---|
| | | Number | Percent Composition | Number | Percent Distribution |
| | Agriculture, Forestry, Fisheries | 57 | .3 | 413 | .1 |
| 07 | Agricultural Services | 44 | .3 | 200 | .1 |
| 09 | Fishing | 9 | .1 | - | - |
| | Mining | 6 | .1 | 31 | - |
| | Contract Construction | 762 | 4.6 | 16,910 | 3.8 |
| 15 | General Contractors | 208 | 1.3 | - | - |
| 16 | Heavy Construction | 45 | .3 | - | - |
| 17 | Special Contractors | 509 | 3.1 | 6,117 | 1.4 |
| | Manufacturing | 1,046 | 6.3 | 53,665 | 12.0 |
| 20 | Food Products | 82 | .5 | 5,671 | 1.3 |
| 22 | Textile Mill Products | 20 | .1 | 1,097 | .2 |
| 23 | Apparel and Other Textiles | 162 | 1.0 | 6,393 | 1.4 |
| 24 | Lumber and Wood | 20 | .1 | - | - |
| 25 | Furniture and Fixtures | 28 | .2 | 673 | .2 |
| 26 | Paper Products | 26 | .2 | 1,454 | .3 |
| 27 | Printing and Publishing | 319 | 1.9 | 14,725 | 3.3 |
| 28 | Chemicals and Drugs | 27 | .2 | 1,414 | .3 |
| 30 | Rubber and Plastics | 19 | .1 | 872 | .2 |
| 31 | Leather Products | 22 | .1 | 1,070 | .2 |
| 32 | Stone, Clay, and Glass | 12 | .1 | 294 | .1 |
| 33 | Primary Metals | 12 | .1 | 386 | .1 |
| 34 | Fabricated Metals | 71 | .4 | 3,582 | .8 |
| 35 | Non-Electrical Machinery | 57 | .3 | 3,723 | .8 |
| 36 | Electronic Equipment | 41 | .2 | 2,231 | .5 |
| 37 | Transportation Equipment | 13 | .1 | 1,480 | .3 |
| 38 | Instruments | 27 | .2 | 2,190 | .1 |
| 39 | Miscellaneous Manufacturing | 50 | .3 | 1,327 | .3 |
| | Transportation/Communication/ Utilities | 685 | 4.1 | 35,972 | 8.1 |
| 41 | Local Passenger Transit | 94 | .6 | 2,223 | .5 |
| 42 | Trucking and Warehousing | 180 | 1.1 | 3,133 | .7 |
| 44 | Water Transportation | 30 | .2 | - | - |
| 45 | Air Transportation | 55 | .3 | 8,573 | 1.9 |
| 47 | Transportation Services | 198 | 1.2 | 2,627 | .6 |
| 48 | Communication | 87 | .5 | 12,823 | 2.9 |
| 49 | Electric/Gas/Sanitary Services | 21 | .1 | 5,584 | 1.3 |
| | Wholesale Trade | 1,423 | 8.6 | 21,813 | 4.9 |
| 50 | Durable Goods | 698 | 4.2 | 11,133 | 2.5 |
| 51 | Non-Durable Goods | 709 | 4.3 | 10,098 | 2.3 |
| | Retail Trade | 3,829 | 23.1 | 57,415 | 12.9 |
| 52 | Building Materials | 95 | .6 | - | - |
| 53 | General Merchandise | 66 | .4 | 4,617 | 1.0 |

Table 11 (continued)

| Sic Code | Industry | Establishments Number | Establishments Percent Composition | Employees Number | Employees Percent Distribution |
|---|---|---|---|---|---|
| 54 | Food Stores | 477 | 2.9 | 8,197 | 1.8 |
| 55 | Auto Dealers/Service Stations | 281 | 1.7 | 2,452 | .5 |
| 56 | Apparel and Accessories | 393 | 2.4 | 3,369 | .8 |
| 57 | Furniture and Furnishings | 192 | 1.2 | 1,310 | .3 |
| 58 | Eating and Drinking Places | 1,230 | 7.4 | 23,156 | 5.2 |
| 59 | Miscellaneous Retailing | 1,051 | 6.4 | 9,043 | 2.0 |
| | Finance/Insurance/Real Estate | 2,072 | 12.5 | 69,750 | 15.6 |
| 60 | Banking | 249 | 1.5 | 18,129 | 4.1 |
| 61 | Credit Agencies | 167 | 1.0 | - | - |
| 62 | Security and Commodity Brokers | 214 | 1.3 | 7,131 | 1.6 |
| 63 | Insurance Carriers | 188 | 1.1 | 24,011 | 5.4 |
| 64 | Insurance Agents | 345 | 2.1 | 6,593 | 1.5 |
| 65 | Real Estate | 706 | 4.3 | 8,108 | 1.8 |
| 67 | Holding and Investment | 178 | 1.1 | 2,160 | .5 |
| | Services | 6,396 | 38.6 | 189,569 | 42.5 |
| 70 | Hotels and Lodging | 77 | .5 | 5,321 | 1.2 |
| 72 | Personal Services | 586 | 2.5 | 4,196 | .9 |
| 73 | Business Services | 1,120 | 6.8 | 32,532 | 7.3 |
| (731) | Advertising | 109 | .7 | 1,759 | .4 |
| (732) | Credit/Mailing/Photography | 158 | 1.0 | 1,894 | .4 |
| (734) | Building Services | 105 | .6 | 4,104 | .9 |
| (736) | Personnel Services | 120 | .7 | 7,746 | 1.7 |
| (737) | Computer and Data Processing | 86 | .5 | 2,036 | .5 |
| (739) | Miscellaneous Services | 535 | 3.2 | 14,875 | 3.3 |
| 75 | Auto Repair and Services | 420 | 2.5 | 36,83 | .8 |
| 76 | Miscellaneous Repair | 135 | .8 | 932 | .2 |
| 78 | Motion Pictures | 112 | .7 | - | - |
| 79 | Amusement and Recreation | 139 | .8 | 3,460 | .8 |
| 80 | Health Services | 1,039 | 6.3 | 54,317 | 12.2 |
| 81 | Legal Services | 995 | 6.0 | 8,708 | 2.0 |
| 82 | Educational Services | 167 | 1.0 | 30,151 | 6.8 |
| 83 | Social Services | 371 | 2.2 | 9,492 | 2.1 |
| 84 | Museums and Gardens | 16 | .1 | 1,093 | .2 |
| 86 | Membership Organizations | 594 | 3.6 | 8,124 | 1.8 |
| 89 | Miscellaneous Services | 574 | 3.5 | 24,450 | 5.5 |
| (891) | Engineering and Architecture | 248 | 1.5 | 16,987 | 3.8 |
| (892) | Non-commercial Research | 29 | .2 | 2,631 | .6 |
| (893) | Accounting/Auditing/ Bookkeeping | 194 | 1.2 | 4,270 | 1.0 |
| (899) | Unclassified Services | 103 | .6 | 562 | .1 |
| - | Non-Classifiable Establishments | 275 | 1.7 | 470 | .1 |
| Total | | 16,550 | 100.0 | 446,008 | 100.0 |

* Boston comprises 96 percent of Suffolk County employment. Sum of 2-digit establishments and employment do not add to totals because non-classified 2-digit administrative and auxiliary units not included in this list.

\- Means data was classified and confidential and not disclosed.

Source: U.S. Bureau of the Census, County Business Patterns, Massachusetts, 1982, March 1984.

advertising and personnel services, building services, and computer and data processing.

Educational services were third with 30,151 workers, centered principally in 31 colleges and universities with 27,230 employees. Boston students come from the region, the nation, and the world.

Professional services are significant in Boston and include 8,708 workers in legal services, 16,987 workers in engineering and architecture, 4,270 in accounting, auditing, and bookkeeping, and 2,631 in noncommercial research.

Finance in Boston, in 1982, was served by 2,072 businesses and 69,750 workers (17 percent of the total). This included 249 banking establishments with 18,129 workers, 7,131 workers in the brokerage business, and 2,160 in investment holding companies. Boston banks and investment banking houses have financed development in the nation and the world for more than a century and a half. Boston continues as the leader of the nation's mutual fund industry and is one of the nation's leading money management centers.

The report on business establishments provides significant insight on other aspects of today's Boston economy. Hotels and lodging places, rapidly growing, had 5,321 employees in 1982. In retail trade, 1,230 eating and drinking places dominate with 23,156 workers (5 percent of the total), ranking food stores which have 8,197 employees, and the now expanding general merchandise stores, with 4,617 workers. Communications dominate "Transportation and Communications" with 12,823 workers, followed by air transportation with 8,573 employees, reflecting Boston's role as a business and tourist cross-road and as a disseminator of information and knowledge.

In manufacturing, printing and publishing, apparel, and food processing lead with 26,789 workers, though the most rapidly growing industries--fabricated metals, machinery, electronics, transportation equipment and instruments--comprise 11,016 employees.

Most Boston businesses are small. Two-thirds of all establishments had less than ten employees, and another 23 percent had between 10 and 49 employees. See Table 12. Only one percent of all establishments had more than 250 employees (but these accounted for one-third of total jobs).

Over one third of all private establishments were in services, with another 22 percent in retail trade. Manufacturing accounted for only 6 percent of all establishments.

Suffolk County had approximately the same number of establishments in 1982 as in 1976, but 700 fewer establishments with less than ten employees. Structural change and growth in the economy resulted in an increase in establishment size, with a rise in the number of firms in the 10 to 49 and 50 to 249 employee class. Consequently, the same number of establishments in Suffolk County accounted for 54,000 more jobs in 1982 compared to six years earlier.

## Money Management, Venture Capital, and Banking

Boston manages more mutual fund money than any other city. An estimate and analysis published early this year by the Financial Times Survey of London credited eleven Boston firms with managing $103 billion of mutual funds. See Table 13. The mutual fund industry was born in Boston in 1942 with the creation of the Massachusetts Investors Trust.

Table 13

BOSTON FUND MANAGERS

| Name | Funds Under Management ($Billions) | Ownership |
|---|---|---|
| Fidelity Investment | 20.0 | Independent |
| Loomis Sayles and Co. | 12.5 | 66% owned by New England Life Insurance |
| State St. Research & Management | 12.0 | Metropolitan Life Insurance |
| Putnam Management | 12.0 | Marsh and McLennan |
| Batterymarch Financial | 11.3* | Independent |
| Scudder, Stevens and Clark | 11.0 | Independent |
| Massachusetts Financial | 8.0 | Sun Life Assurance Company of Canada (U.S.) |
| The Boston Company | 6.1 | Shearson-American Express |
| Keystone Massachusetts Group | 5.0 | Travelers Corporation |
| Eaton and Howard, Vance Sanders | 3.0 | Independent |
| Colonial Management Associates | 2.5 | Independent |

* Discretionary money, excludes money market funds and cash management.

Source: Financial Times Survey, March 6, 1984, London.

Table 12

NUMBER OF BUSINESS ESTABLISHMENTS BY EMPLOYMENT SIZE-CLASS, BY TYPE OF BUSINESS, SUFFOLK COUNTY, 1976 AND 1982

| | All Establishments | 1-9 | 10-49 | 50-249 | 250-999 | 1,000 Or More |
|---|---|---|---|---|---|---|
| | | | Number | | | |
| 1982 | 16,550 | 11,300 | 3,881 | 1,148 | 171 | 50 |
| 1976 | 16,803 | 12,029 | 3,673 | 925 | 133 | 43 |
| | | | Percent of Total | | | |
| 1982 | 100.0 | 68.3 | 23.5 | 6.9 | 1.0 | 0.3 |
| 1976 | 100.0 | 71.6 | 21.9 | 5.5 | 0.7 | 0.3 |

Source: U.S. Bureau of the Census, County Business Patterns, Massachusetts, 1976 and 1982.

In terms of all types of money management, Boston probably ranks second only to New York, especially if the insurance companies are left out, according to the Financial Times Survey. Boston's money dates back to the earliest days of the nation, flowing from the mercantile trade of the 18th century and the industrial revolution of the 19th century. Boston money helped finance the development of the West and Hawaii. The several types of Boston money managers include mutual funds, banks, insurance companies and trust companies. The insurance companies not only invest their own money but also manage pension funds. The trust companies manage money for mutual funds, pension funds, and rich individuals. Justice Samuel Putnam's "prudent man ruling", in 1830, early established Boston as a safe place for people to leave their money. In a suit brought by Harvard University against its trustees, when the value of stock shares bought declined, Justice Putnam ruled that so long as a trustee invests as he would invest for himself, taking into consideration that income was a factor plus the prudent safety of principal, it was perfectly acceptable for Harvard's trustees to buy common stock.

Boston is also the birthplace of the venture capital industry in the U.S. and is still "one of the first ports of call for any U.S. entrepreneur with a good idea, according to the Financial Times Survey. Subsequent to the founding of the first venture capital company in the late 1940s, Boston venture capital firms currently include TA Associates; Greylock; Palmer Organization; the Charles River Partnership; Burr, Egan and Deleage; Morgan, Holland; Matrix Partners and serveral more. Boston venture capital firms are credited with the start-up of Digital Equipment. More than $10 billion was raised for

U.S. venture capital investment in the last five years, and $4 billion was committed in 1983.

The structure of Boston banking is changing radically and the range of financial products and services offered is expanding. New competitive pressures and the emerging role of Boston as the financial capital of New England are bringing change. New institutional development, new laws and new technology are forging pressures for consolidation. Competitive pressures are flowing from the rise of non-banks (Sears, American Express, Merrill Lynch), foreign banks (Lloyds and Barclays), and the role of the big money centers (Citibank and Bank of America). A new and unique development, called "The New England Experiment", is an attempt to create a regional interstate bank network based on new state laws which facilitate interstate mergers in New England but restrict entry by banks outside the region. Consolidation is favored also by the ability of only the largest banks to invest in electronic payments systems and benefit from economies of scale. Currently twelve major mergers are planned and more are expected, according to the Financial Times Survey. Boston banks lead in lending to high technology companies, venture capital investment, leasing, trade financing, trust management, and pension fund investing. Five leading Boston-based bank holding companies had assets of $40 billion as of the end of 1983. See Table 14.

<u>Legal Services</u>

Boston law firms are expanding to handle more business and to have enough specialty lawyers to deal with cases in areas such as high tech, health care, environment, and cable TV. A decade ago there was hardly a

Table 14

TOP FIVE BOSTON-BASED BANK HOLDING COMPANIES
(Year ended December 31, 1983)

| Holding Company | Total Assets ($M) | Growth Rate | Net Income ($M) | Growth Rate (Decrease) | Total Deposits ($M) | Growth Rate | Return On Assets | Return On Equity | Loan Loss Provision ($M) | Non-Performing Loans & Lease Receivables ($M) | As % Of Loans |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bank of Boston* | 19,538.0 | + 7.0 | 135.7 | + 9.0 | 12,381.0 | + 6.0 | 0.72 | 14.44 | 54.0 | 326.0 | 2.7 |
| Bank of New England** | 5,800.9 | +14.5 | 36.6 | + 2.7 | 4,887.4 | +19.5 | 0.66 | 14.23 | 19.5 | 66.5 | 1.72 |
| Shawmut Corporation | 5,775.2 | + 7.1 | 33.0 | (3.0) | 4,298.7 | + 8.6 | 0.62 | 11.68 | 24.0 | 68.5 | 2.1 |
| Baybanks | 4,639.3 | +25.1 | 32.0 | (3.7) | 3,921.2 | +23.8 | 0.77 | 13.0 | 5.1 | 15.2 | 0.6 |
| State St. Boston Corp. & Subsidiaries | 4,044.4 | + 3.3 | 38.5 | (21.3) | 2,485.4 | + 1.0 | 1.03*** | 18.3*** | 4.7 | 5.4 | 0.39 |

* Announced a definitive acquisition agreement with Colonial Bancorp, a Connecticut-based bank holding company with over $1.3 billion in assets; and RIHT Financial Corporation of Rhode Island with over $2 Billion in assets. Agreement to acquire Casco Northern Corporation, the largest banking organization in Maine with $659 million in assets. Purchase an equity stake in the Chittenden Corporation, the largest bank holding company in Vermont with assets of $682 million.

** Merger pending with CBT Corporation of Hartford Connecticut, with assets of $1.6 billion. Agreement to acquire Maine National Corporation of Portland, Maine, with assets of $604 million, subject to approval.

*** Excludes from earnings the impact of the loss on the sale of subsidiaries of $2,510,000; net of taxes and related expenses.

Source: Financial Times Survey, March 6, 1984, London.

firm in Boston with 100 lawyers, while as of 1982 there were ten, according to an article in the Boston Globe. As of June 1982, thirteen large Boston firms with a total of 1,391 lawyers had experienced a combined growth in their legal staff of 38 percent since 1979. See Table 15.

High Technology Industry

The high technology industry of the Boston Metro Region is a mainstay and one of the most rapidly growing segments of the State economy, and contributed importantly to mild impact of the 1981-82 recession and the smart resurgence of 1983 and 1984. Six high tech firms are among the fifteen largest employers of the Boston area, according to the Financial Times Survey. See Table 16.
Employment in high technology companies, including computer and information processing equipment firms, as well as those engaged in defense electronics, drug manufacture, biotechnology, robotics and medical instruments makes up more than a third of all manufacturing jobs in Massachusetts, and experienced a 42 percent growth, from 1976 to 1981, in comparison with twelve percent for Massachusetts' manufacturing industry as a whole. See Table 17.

The information processing equipment firms include the Digital Equipment Company, the second largest computer company in the world after IBM, Wang Laboratories, the leading office automation company, and Data-General, a mini-computer firm. Computervision provides equipment for computer-aided manufacturing. Software companies include Cullinet, Lotus Development and Spinnacker Software. The more established high

Table 15

| **Largest law firms in Boston** | **Size** | **Turnover** | **New hires** in 1981 | **Growth** Since 1979 | **Starting salaries** | **Top billing rates** per hour | **% from Harvard** |
|---|---|---|---|---|---|---|---|
| Bingham, Dana & Gould | 104 | 10% | 10 | 45% | $32,000 | $180 | 50% |
| Choate, Hall & Stewart | 96 | 10% | 18 | 19% | $32,000 | $180 | 47% |
| Foley, Hoag & Eliot | 95 | 17% | 15 | 38% | $34,000 | $170 | 55% |
| Gaston Snow & Ely Bartlett | 159 | 4% | 25 | 56% | $34,000 | $165 | 31% |
| Goodwin, Procter & Hoar | 124 | 10% | 23 | 25% | $35,000 | $200 | 38% |
| Hale & Dorr | 156 | 13% | 26 | 28% | $32,000 | $225 | 46% |
| Herrick & Smith | 89 | 12% | 14 | 30% | $34,000 | $185 | 40% |
| Hill & Barlow | 62 | .04% | 9 | 27% | $32,000 | $170 | 60% |
| Mintz, Levin | 67 | 11% | 18 | 89% | $32,000 | $210 | 33% |
| Nutter, McClennen & Fish | 93 | 8% | 15 | 21% | $32,000 | $150 | 38% |
| Palmer & Dodge | 94 | 16% | 18 | 49% | $32,000 | $180 | 56% |
| Ropes & Gray | 154 | 6% | 15 | 35% | $34,000 | $200 | 60% |
| Sullivan & Worcester | 98 | 0% | 18 | 36% | $31,500 | $225 | 35% |

**Source: The American Lawyer Guide**
**All figures as of June 1982**

(THE BOSTON GLOBE)

Table 16

TOP 15 EMPLOYERS
(In Boston Area)

| Company | City | Number of Employees |
|---|---|---|
| Raytheon Corp. | Lexington | 72,000 |
| Digital Equipment | Maynard | 67,100 |
| Gillette Co. | Boston | 30,200 |
| Stop & Shop Companies | Boston | 29,000 |
| J. Hancock Mutual | Boston | 20,216 |
| Wang Laboratories | Lowell | 19,760 |
| Liberty Mutual | Boston | 18,791 |
| Data General | Westboro | 15,210 |
| Poloroid | Cambridge | 14,540 |
| Bank of Boston | Boston | 13,000 |
| M/A-Com | Burlington | 8,739 |
| Eastern Gas & Fuel Assoc. | Boston | 8,470 |
| New England Mutual | Boston | 8,218 |
| Dennison Manufacturing | Framingham | 8,200 |
| Cabot Corporation | Boston | 7,500 |

Research: Rivka Nachoma

Source.: The Financial Times Survey, March 6, 1984, London.

Table 17

HIGH TECHNOLOGY EMPLOYMENT IN MASSACHUSETTS

| Industry | Employment | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | Change % 1976-81 |
| Drugs | 2,079 | 2,059 | 2,283 | 2,694 | 2,723 | 2,831 | 36.2 |
| Ordinance and accessories | 4,586 | 4,921 | 4,894 | 5,124 | 5,447 | 5,559 | 21.2 |
| Office of computing and accounting machines | 21,386 | 27,060 | 31,459 | 39,116 | 46,142 | 48,575 | 127.1 |
| Electrical and electronic machinery, equipment and supplies | 83,800 | 91,000 | 98,300 | 104,000 | 110,500 | 111,300 | 32.8 |
| Guided missiles and space vehicles and parts | 11,294 | 11,819 | 12,158 | 12,317 | 11,647 | 11,289 | - |
| Miscellaneous transportation equipment | 1,872 | 1,660 | 1,456 | 1,113 | 1,062 | 1,336 | -28.6 |
| Instruments, photographic, medical and optical goods, watches and clocks | 45,100 | 51,500 | 56,400 | 57,500 | 58,500 | 61,300 | 35.9 |
| Total | 170,117 | 190,019 | 206,950 | 222,464 | 236,021 | 242,190 | 42.4 |
| All manufacturing | 593,600 | 621,100 | 652,100 | 672,100 | 674,900 | 666,800 | 12.3 |
| High tecnology as a percentage of all manufacturing | 28.7 | 30.6 | 31.7 | 33.1 | 35.0 | 36.3 | |

Research: Rivka Nachoma

Source: The Financial Times Survey, March 6, 1984, London.

technology firms with major facilities in the Boston area include Honeywell, Raytheon, Polaroid, and General Electric.

## Publishing

Boston's publishing industry, dating back to the early 19th century, continues to thrive on new entrepreneurial directions and the City's intellectual and literary ambience.* Houghton-Mifflin, founded in 1832, published works of Nathaniel Hawthorne and Ralph Waldo Emerson. Little Brown, established in 1837, printed Louisa May Alcott. Beacon Press has just celebrated its 130th anniversary. These venerable publishing houses, and newer ones, including the Atlantic Monthly Press, David Godine, the Boston Publishing Company, and others are thriving on software books, electronic publishing, textbooks, and trade publications. With its universities, Boston is the leader among all major cities in per capita purchases in bookstores, according to the Bureau of Industrial Economics of the U.S. Department of Commerce. This is said to make Boston congenial to industry, which has a strong presence here even with the leadership and ties to New York. Boston publishing has always been nationally focused, with abolitionist works in the nineteenth century and books on feminist concerns and tracts by black writers in recent times.

---

* Edwin McDowell, New York Times, May 1, 1984, article entitled "Boston Publishing Quietly but Rapidly Modernizes".

The Communications-Information-Knowledge Industries

Boston has a strong foothold in the communications-information-knowledge industries, encompassing communications, business and professional services, finance and high technology equipment production activities, and the potential is extraordinary. These activities represent 37 percent of the City's employment and 28 percent of the value of production, and their projected 50 percent growth to 1990 will dominate, raising the knowledge industry's share of employment in the Boston economy to 47 percent in that year, according to a 1982 study of the Boston Redevelopment Authority (The Communications-Information-Knowledge Industries, and the Potential for Boston). For the nation as a whole, in comparison, the knowledge industries account for a smaller share (24 percent) of employment and production (19 percent), which are projected to grow by one-fourth and one-third, respectively, to 1990. See Table 18.

An analysis of the composition of the knowledge industries sheds light on the relative specialization of Boston and the metro area in relation to that for the nation as a whole. In 1979, Boston had a larger relative concentration in "direct information services" (printing and publishing, business services and education services) than was the case for the nation. See Table 19. The metro area, in turn, had twice the relative share of the "equipment" component of the knowledge industries in relation to that of the nation, while the City's share was negligible. In the case of the third and major component of the knowledge industries "Other Information and Knowledge" (banking, brokerage, legal and other professional services, health services and government) the Boston and nation share exceeded that of the metro area.

Table 18

COMMUNICATIONS-INFORMATION-KNOWLEDGE INDUSTRIES, U.S., BOSTON, BOSTON METRO AREA

NUMBER OF WORKERS, 1979 AND 1990

| SIC | Industry & Components | 1979 U.S. (000s) | 1979 Boston (Suff.) | 1979 Metro Area | 1990 U.S. (000s) | 1990 Boston (Suff.) | 1990 Metro Area |
|---|---|---|---|---|---|---|---|
| A. | Basic Communications Industries | | | | | | |
| 483,9 | Broadcasting | 193 | 1,750 | 3,004 | 277 | 2,664 | 4,572 |
| 481,2 | Telephone & Telegraph Serv. | 1,121 | 10,971 | 26,463 | 1,454 | 14,881 | 35,894 |
| | Sub-total | 1,314 | 12,721 | 29,467 | 1,731 | 17,545 | 40,466 |
| B. | Direct Information Industries | | | | | | |
| 27 | Printing & Publishing | 1,306 | 13,228 | 33,256 | 1,595 | 16,736 | 42,075 |
| 732-9 | Misc. Business Services (.80) | 2,512 | 17,297 | 52,979 | 3,806 | 27,959 | 85,643 |
| 78 | Motion Pictures | 308 | 1,249 | 2,816 | 329 | 1,351 | 3,046 |
| 82 | Educational Services | 1,403 | 25,857 | 80,273 | 2,149 | 42,364 | 131,519 |
| | Sub-total | 5,529 | 57,631 | 169,594 | 7,879 | 88,410 | 262,283 |
| C. | Other Communications-Info. Serv. | | | | | | |
| 60 | Banking | 1,492 | 15,455 | 31,363 | 2,013 | 21,928 | 44,498 |
| 61,2 | Credit & Brokerage | 898 | 7,126 | 12,246 | 1,329 | 11,231 | 19,300 |
| 731 | Advertising | 166 | 1,443 | 2,064 | 213 | 1,933 | 2,765 |
| 79 | Amusement & Recreation | 761 | 3,051 | 9,481 | 1,042 | 4,402 | 13,679 |
| 891-9 | Misc. Professional Services | 1,720 | 12,676 | 29,062 | 2,413 | 29,377 | 48,859 |
| 81 | Legal | | 7,125 | 9,985 | | | |
| 80 | Health Services | 4,024 | 49,025 | 138,069 | 8,741 | 86,500 | 243,609 |
| 70 | Hotel | 1,543 | 5,046 | 13,292 | 2,126 | 7,335 | 19,321 |
| 734,6 | Misc. Business Services (.20) | 629 | 4,471 | 11,276 | 951 | 7,209 | 18,167 |
| 596 | Retail-Direct Mail & Phone | 250 | 2,154 | 7,020 | 325 | 2,929 | 9,547 |
| 90,9 | Government | 4,490 | 24,894 | 71,963 | 5,004 | 28,329 | 81,894 |
| | Sub-total | 15,973 | 132,466 | 335,821 | 24,157 | 201,173 | 501,639 |
| D. | Communications-Information Equip. | | | | | | |
| 357 | Computing & Office | 586 | 1,750 | 20,146 | 929 | 2,978 | 34,288 |
| 366 | Telephone & Telegraph | 641 | 324 | 33,692 | 784 | 411 | 42,708 |
| 367 | Electronic & Components | 605 | 544 | 18,188 | 880 | 841 | 28,119 |
| 381,2 | Measuring & Controlling | 218 | 1,575 | 20,420 | 296 | 2,252 | 29,192 |
| 383,5 | Optical & Opthalmic | 82 | 360 | 5,902 | 102 | 465 | 7,630 |
| 386 | Photographic and Supplies | 134 | 157 | 11,405 | 165 | 201 | 14,566 |
| | Sub-total | 2,266 | 4,710 | 109,753 | 3,156 | 7,148 | 156,503 |
| Total | (C-I-K Industries) | 25,082 | 207,528 | 644,635 | 36,923 | 314,276 | 960,891 |
| Total | (All Industries) | 104,120 | 555,513 | 1,918,612 | 130,665 | 668,800 | 2,357,600 |

Table 19

Composition of the C-I-K Industries in Boston, the Metro Area and the U.S., 1979 (Employment, in Percent)

| | Boston | Boston Metro Area | U.S. |
|---|---|---|---|
| Communications Services | 6 | 5 | 5 |
| Direct Information Services | 28 | 26 | 22 |
| Other Information & Knowledge | 64 | 52 | 64 |
| Equipment | 2 | 17 | 9 |
| Total C-I-K Industries | 100 | 100 | 100 |

In effect, Boston and its metro area which both have a greater concentration of employment in the knowledge industries than the nation (37 percent, 34 percent, and 24 percent, respectively), there is a clear division of specialization. Boston has a concentration in the communications, information and knowledge services. The metro area has an extraordinary aggregation of high technology equipment production activity.

## Education and Medicine

The City's educational and medical institutions are an important component of its economy. The City has 35 hospitals, including Massachusetts General, University, and the Boston City Hospitals and the New England Medical Center. In addition, the City is the home of the medical and dental schools of Harvard, Tufts, and Boston Universities.

There are 65 colleges and universities in the Boston metropolitan area, at which approximately 250,000 students are enrolled; 125,000 attend institutions in the City. When trade and vocational schools are taken into account, the metropolitan area has over 100 institutions of higher education. The City has more students in relation to population than any other major U.S. city.

Educational and medical institutions provide employment opportunities for residents of the City and its metropolitan area. In addition, expenditures by the institutions' students, patients and visitors are important to the City's trade and service sectors.

The presence of large and growing institutions generates pressure on the City's neighborhoods and housing stock, and public policy is much concerned with balancing institutional growth with neighborhood preservation and needs.

## Culture and Tourism

The City has long been recognized as a cultural center. Many organizations are devoted to the various arts and sciences, including major museums such as the Museum of Fine Arts and the Museum of Science,

and well-known performing groups such as the Boston Symphony Orchestra and the Boston Pops.

The City is experiencing an increase in the number of tourists with the completion of new facilities including the Faneuil Hall Marketplace, Copley Place and the John F. Kennedy Library which are attracting large numbers of tourists, and the role of national demographic and personal income growth factorsand dollar devaluation factors. According to data compiled by the Greater Boston Convention and Tourist Bureau and the Boston Redevelopment Authority, the number of tourists visiting the City increased from 2.9 million in 1970 to 5.5 million in 1980. Between 1970 and 1976 the number of tourists rose steadily, reaching a peak of 5.2 million in the bicentennial year of 1976. This was followed by a post-bicentennial slump in 1977 to a level of 4.8 million, a rise in 1980 to 5.5 million, and a leveling off at 5.6 million tourists anticipated for 1984.

## Boston as a Transportation Center

The City is a major national and international air terminus, a seaport, and the center of New England's rail, truck and bus services. The City is served by three limited access interstate highways which connect it to the national highway system, including the Massachusetts Turnpike which traverses the Commonwealth from the border of New York State directly to downtown Boston.

The emphasis in transportation planning has shifted away from the highway-dominated programs of the past and towards a public transit orientation. Investment in public transportation has been facilitated by federal transportation legislation that has enabled the Massachusetts

Bay Transportation Authority to receive a total of approximately $2.3 billion since 1965; $317 million of this total was received in 1981 and $281 million in 1982 and $265 million in 1983 for projects in Boston. The current transportation capital program for the next ten years envisions an investment of about $3 billion in the City's urban area, funded principally by the Federal government.

Important improvements are being made to Boston's mass transit system. Work underway includes the modernization of Red Line stations and tunnels to increase capacity, as well as systemwide signalling and communication improvements designed to reduce travel times. But by far, the most significant component of the ongoing improvements to the City's transit system, is the continued progress on the Southwest Corridor Project (SWCP). The relocation of the Orange Line, which is the core of the SWCP, is expected to be completed in the second half of 1985. The relocated Orange Line, which stretches eight miles from Downtown Boston to Forest Hills in Jamaica Plain and includes nine new stations, is expected to carry more than 120,000 riders daily. Another 20,000 daily riders will use the new commuter rail and high speed Amtrack lines to be located within the Corridor. To date, approximately $630 million has been invested in the Orange Line relocation and related developments. Another $60 million will be expended through 1985.

In addition to the relocation of the Orange Line, the SWCP has made available over 80 acres of new parkland and nearly 150 acres of developable land. With the opening of the new Orange Line expected in 1985, intensified planning has begun for the Corridor's remaining development parcels. Planning is also underway for replacement service on the Orange Line's existing route along Washington St. Bus routes or

some combination of buses and light rail are the favored options. A final decision on the replacement service options is expected soon after the completion of the Environmental Impact Statement in November of 1984.

Another proposed facility of considerable importance to Boston's transportation system is the Central Artery Depression and Third Harbor Tunnel Project, whose funding, under the federal interstate highway program, is under consideration by Congress. The project, with an estimated cost of $2.2 billion, would involve ten to fifteen years of construction time. The benefits of the Central Artery/Harbor Tunnel project are numerous. They include a 65 percent reduction of traffic congestion along the Artery, sufficient capacity to meet projected vehicular use for the next twenty to thirty years, greatly improved access to Logan Airport and the Port of Boston, and the creation of twenty acres of land and air rights in Downtown Boston.

The Massachusetts Port Authority ("MassPort") was created by the General Court of the Commonwealth as a body politic and corporate to stimulate and support the Commonwealth's economy through development and management of the City's major air and sea transportation centers and the Tobin Bridge over the Mystic River. MassPort is financially independent and the City is not responsible for any debt or other obligations incurred by MassPort.

Since MassPort was formed in 1959, heavy use of Boston-Logan International Airport ("Logan Airport") and the Port of Boston has compelled significant expansion of the facilities. Logan Airport, which is served by 34 domestic and international airlines, recently opened for business the last of five major terminal projects.

Air travel passengers arriving at and departing from Logan Airport increased at an annual rate of 5 percent between 1970 and 1982. In 1983, Logan Airport served 17.8 million passengers (up 13 percent from 1982), handled 104 million pounds of mail and carried 493 million pounds of cargo on a total of 289,000 flights.

Investments in Boston's transportation infrastructure is fundamental to the well-functioning and advance of the City's economy, and makes up more than one-fourth of recent and current (1978-84) and scheduled (1985-87) public and private investment in Boston. See the Boston Redevelopment Authority study, Boston's Infrastructure; Investment Record: 1978-83 and Current Plans, and Part II, Investment, of this report.

## Relative Cost of Energy in Massachusetts

During the mid-1970s, sizable price increases for energy products adversely affected the economies of the region and the Commonwealth. Thus, it is important to monitor trends in energy costs to anticipate the potential impacts of future energy price changes.

Throughout the 1970s, Massachusetts paid more per unit of energy than the nation as a whole for petroleum, natural gas and electricity. In 1971, the cost of energy to Massachusetts' manufacturers was 58 percent above that of the United States. After the oil shocks of the mid-70s, the difference reached 88 percent. Since 1976, however, the state has improved its competitive position as the energy cost differential receded to the 1971 level (see Table 20).

While businesses, industries, utilities and residents in Massachusetts use relatively more petroleum products than their national

Table 20

COSTS OF PURCHASED FUELS AND ENERGY CONSUMED IN MANUFACTURING, UNITED STATES, NEW ENGLAND AND MASSACHUSETTS 1971, 1974, 1976,1980

| | Cost in 1980 Dollars per Million BTU | | | | |
|---|---|---|---|---|---|
| | 1980 | 1976 | 1974 | 1971 | Average Annual Percent Change 1971-80 |
| United States | 4.06 | 2.93 | 2.23 | 1.48 | 19.3 |
| New England | 6.03 | 4.43 | 4.03 | 2.13 | 20.3 |
| Massachusetts | 6.45 | 4.93 | 4.20 | 2.33 | 19.6 |
| | Cost Ratio of Massachusetts to United States | | | | |
| All Fuels | 1.59 | 1.68 | 1.88 | 1.58 | |
| Electricity | 1.67 | 1.85 | 1.91 | 1.51 | |
| Oil-Distillate | 1.02 | 1.15 | 1.11 | 1.07 | |
| Oil-Residual | 1.10 | 1.06 | 1.08 | 1.10 | |
| Natural Gas | 1.43 | 1.86 | 2.09 | 1.87 | |

Source: U.S. Department of Commerce, Annual Survey of Manufacturers, Fuels and Electric Energy Consumed, 1980; New England Regional

Commission, Analysis of Energy Use in the Manufacturing Sector of New England, March 1979.

counterparts, the price of petroleum has been stable since 1980 (see Appendix Table A). In contrast, the price of deregulated natural gas of which the Commonwealth uses relatively less than other areas of the United States, has risen rapidly since 1976. Accordingly, combined distillate oil and natural gas costs increased at a lower rate for users in the Commonwealth than for users in the United States as a whole during the 1976-1980 period. Improvement of the competitive position of Massachusetts' industrial sector since 1974 is due, in part, both to shrinking energy cost differentials and the lower energy intensiveness of the Commonwealth's industries.

The short-term energy outlook for Massachusetts is good for all sectors. From December 1981 to December 1983, natural gas prices rose 32 percent in the nation (U.S. city average) compared to a 4 percent drop in the Boston area. Over the same period, the price of fuel oil #2 dropped by 13 percent in the Boston area and 12 percent nationwide. As nationwide gas and oil prices reach parity with Massachusetts' oil prices, and conservation and other energy alternatives replace some oil use, the state's competitive position, especially in the industrial sector, will continue to improve. In the long term, however, oil uncertainties cloud the state's outlook. Massachusetts is still vulnerable to sudden oil price hikes or supply shortages due to the state's relative dependence on imported petroleum.

## Economic Prospects for Nation and City

The national economy appears headed for strength in 1985, with a 4.5 percent growth in real Gross National Product (adjusted for inflation), a diminishing unemployment rate and a 4 percent rate of

inflation anticipated, for the year as a whole, (see Table 21). Contrary to previous national recovery periods, unemployment rates are expected to remain high at around 7.5 percent through 1985.

The New England region's economic structure--featuring high technology manufacturing, business and professional services, higher education and medicine--places the region in a favorable position relative to the nation.

Current reports indicate that 1985 will be a year of strong economic growth in the Boston area, the state and the region. New England's high technology companies, largely concentrated in the Boston metropolitan area, resumed employment expansion early this year after a two-year lull. Furthermore, the Massachusetts Division of Employment Security reported in July that more people were working in Massachusetts than at any time in the state's history. In the latest report on unemployment (November 1984), the Massachusetts jobless rate was 3.4 percent, the lowest since 1970, and the lowest unemployment rate among the ten largest industrial states. In the City of Boston, private development completions were at an all-time high in 1984. Development scheduled for the next several years should sustain the expansion and transformation of the City's economic base. Thus, the City has strong growth potential through 1990 and 1995, especially in finance and services. Boston's employment is projected to expand (see Table 22). Employment growth in firms occupying Boston's expanding office space downtown would account for more than one-half of the net new jobs. (See Table 23.)

Table 21

CITY OF BOSTON EMPLOYMENT, 1983, 1990 AND 1995

| INDUSTRY | 1983 | 1990 | 1995 | CHANGE 1983-1990 NUMBER | CHANGE 1983-1990 PERCENT | CHANGE 1990-1995 NUMBER | CHANGE 1990-1995 PERCENT |
|---|---|---|---|---|---|---|---|
| AGRI./MINING | 566 | 514 | 526 | - 52 | - 9.2 | 13 | 2.5 |
| CONSTRUCTION | 10,346 | 12,545 | 13,586 | 2,199 | 21.3 | 1,041 | 8.3 |
| MANUFACTURING | 46,989 | 55,250 | 57,460 | 8,261 | 17.6 | 2,210 | 4.0 |
| TRANSPORTATION/PU. | 39,514 | 40,599 | 43,117 | 1,085 | 2.7 | 2,517 | 6.2 |
| WHOLESALE TRADE | 26,028 | 27,481 | 28,497 | 1,453 | 5.6 | 1,017 | 3.7 |
| RETAIL TRADE | 56,522 | 62,649 | 65,531 | 6,127 | 10.8 | 2,882 | 4.6 |
| FINANCE/INS/RE | 76,245 | 90,446 | 95,782 | 14,201 | 18.6 | 5,336 | 5.9 |
| SERVICES | 199,018 | 238,132 | 270,994 | 39,114 | 19.7 | 32,862 | 13.8 |
| HOTEL | 6,568 | 10,707 | 12,003 | 4,140 | 63.0 | 1,296 | 12.1 |
| MEDICAL | 62,691 | 74,890 | 83,277 | 12,199 | 19.5 | 8,388 | 11.2 |
| EDUCATIONAL | 30,848 | 31,719 | 34,447 | 871 | 2.8 | 2,728 | 8.6 |
| CULTURAL | 4,975 | 5,576 | 5,749 | 601 | 12.1 | 173 | 3.1 |
| SOCIAL/NONPROFIT | 20,698 | 22,813 | 23,520 | 2,115 | 10.2 | 707 | 3.1 |
| BUSINESS | 35,425 | 47,281 | 54,042 | 11,856 | 33.5 | 6,761 | 14.3 |
| PROFESSIONAL/OTHER | 37,813 | 45,145 | 57,955 | 7,332 | 19.4 | 12,810 | 28.4 |
| GOVERNMENT | 91,717 | 93,599 | 98,279 | 1,882 | 2.1 | 4,680 | 5.0 |
| PROPRIETORS | 12,699 | 10,260 | 8,721 | - 2,439 | -19.2 | - 1,539 | -15.0 |
| TOTAL ALL SECTORS | 559,643 | 631,474 | 682,494 | 71,831 | 12.8 | 51,019 | 8.1 |

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

03.04.85 JPB

Table 22

OFFICE EMPLOYMENT, DOWNTOWN BOSTON, 1983, 1990 AND 1995

| INDUSTRY | 1983 | 1990 | 1995 | CHANGE 1983-1990 NUMBER | CHANGE 1983-1990 PERCENT | CHANGE 1990-1995 NUMBER | CHANGE 1990-1995 PERCENT |
|---|---|---|---|---|---|---|---|
| AGRI./MINING | 74 | 69 | 72 | - 4 | - 5.7 | 3 | 4.3 |
| CONSTRUCTION | 1,242 | 1,847 | 2,112 | 606 | 48.8 | 264 | 14.3 |
| MANUFACTURING | 4,699 | 5,943 | 6,267 | 1,244 | 26.5 | 324 | 5.4 |
| TRANSPORTATION/PU. | 14,225 | 16,003 | 18,222 | 1,778 | 12.5 | 2,219 | 13.9 |
| WHOLESALE TRADE | 1,301 | 1,474 | 1,555 | 172 | 13.2 | 82 | 5.5 |
| RETAIL TRADE | 2,826 | 3,390 | 3,610 | 564 | 19.9 | 221 | 6.5 |
| FINANCE/INS/RE | 51,846 | 67,236 | 72,517 | 15,389 | 29.7 | 5,281 | 7.9 |
| SERVICES | 67,666 | 89,087 | 104,134 | 21,421 | 31.7 | 15,047 | 16.9 |
| GOVERNMENT | 17,426 | 18,939 | 20,245 | 1,513 | 8.7 | 1,307 | 6.9 |
| PROPRIETORS | 4,953 | 4,011 | 3,315 | - 941 | -19.0 | - 696 | -17.4 |
| TOTAL ALL SECTORS | 166,258 | 207,999 | 232,050 | 41,741 | 25.1 | 24,051 | 11.6 |

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

03.04.85 JPB

Table 23

DOWNTOWN BOSTON EMPLOYMENT, 1983, 1990 AND 1995

| INDUSTRY | 1983 | 1990 | 1995 | CHANGE 1983-1990 NUMBER | CHANGE 1983-1990 PERCENT | CHANGE 1990-1995 NUMBER | CHANGE 1990-1995 PERCENT |
|---|---|---|---|---|---|---|---|
| AGRI./MINING | 269 | 252 | 264 | - 17 | - 6.1 | 12 | 4.8 |
| CONSTRUCTION | 4,181 | 5,239 | 5,799 | 1,058 | 25.3 | 560 | 10.7 |
| MANUFACTURING | 21,361 | 25,958 | 27,591 | 4,597 | 21.5 | 1,633 | 6.3 |
| TRANSPORTATION/PU. | 15,292 | 16,238 | 17,625 | 946 | 6.2 | 1,386 | 8.5 |
| WHOLESALE TRADE | 8,266 | 9,020 | 9,559 | 754 | 9.1 | 540 | 6.0 |
| RETAIL TRADE | 22,897 | 26,229 | 28,040 | 3,332 | 14.6 | 1,811 | 6.9 |
| FINANCE/INS/RE | 59,471 | 72,911 | 78,913 | 13,440 | 22.6 | 6,002 | 8.2 |
| SERVICES | 87,523 | 108,233 | 125,881 | 20,710 | 23.7 | 17,648 | 16.3 |
| HOTEL | 4,960 | 8,159 | 9,447 | 3,199 | 64.5 | 1,288 | 15.8 |
| MEDICAL | 13,149 | 15,849 | 18,204 | 2,700 | 20.5 | 2,355 | 14.9 |
| EDUCATIONAL | 7,118 | 7,385 | 8,284 | 267 | 3.7 | 899 | 12.2 |
| CULTURAL | 2,766 | 3,128 | 3,331 | 362 | 13.1 | 203 | 6.5 |
| SOCIAL/NONPROFIT | 11,722 | 13,036 | 13,882 | 1,314 | 11.2 | 846 | 6.5 |
| BUSINESS | 22,666 | 30,524 | 36,037 | 7,858 | 34.7 | 5,513 | 18.1 |
| PROFESSIONAL/OTHER | 25,142 | 30,151 | 36,694 | 5,009 | 19.9 | 6,543 | 21.7 |
| GOVERNMENT | 50,454 | 53,214 | 57,105 | 2,760 | 5.5 | 3,891 | 7.3 |
| PROPRIETORS | 5,684 | 4,746 | 4,123 | - 938 | -16.5 | - 623 | -13.1 |
| TOTAL ALL SECTORS | 275,398 | 322,041 | 354,900 | 46,643 | 16.9 | 32,859 | 10.2 |

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

03.04.85 JPB

National Capital Investment Trends and The New England Economy

New England's high technology products are principally capital goods, that is, goods used in other manufacturing and services industries. Therefore, it is important to monitor recent trends in capital investment, capacity utilization and construction in the nation (and the region).

The most important indicator of demand for high technology products is national and regional spending on plant and equipment, or "capital investment". As measured by annual percentage change, New England outperformed the nation by large margins in three of the last four years (see Table 24). For 1984, capital spending was expected to rebound with a growth of fifteen percent nationwide and an increase of twenty percent for New England's manufacturers. This compares favorably with the 1981-83 years when capital spending in the nation declined and that for the region expanded at a lesser rate.

According to the Bank of Boston, firms classified as primary defense contractors will account for virtually all of the increase in regional manufacturing investment in 1984. Although the long-term implications of reliance on the defense industry may not be favorable, the prime defense contracts are boosting the regional economy in the short term.

Manufacturing capacity utilization rates reflect the demand for products of New England's high technology industries. National and regional rates fell after 1979, but recovered in 1983 (see Table 25). New England, with an older capital plant, on average, typically has utilization rates that are less than those for the nation as a whole.

Table 24

CAPITAL SPENDING IN MANUFACTURING,
ACTUAL 1959-1983 AND PLANNED 1984,
UNITED STATES AND NEW ENGLAND

A. Capital Spending, 1959-1984, in Millions of Dollars

| | United States | New England |
|---|---|---|
| 1959 | 13,760 | 556 |
| 1979 | 98,680 | 3,379 |
| 1980 | 115,830 | 4,072 |
| 1981 | 129,390 | 4,494 |
| 1982 | 119,690 | 4,537 |
| 1983 | 110,730 | 4,794 |
| 1984* | 127,400 | 5,732 |

B. Trends in Capital Spending, 1959-1984 (Average Annual Percent Change)

| | United States | New England |
|---|---|---|
| 1959-1979 | +10.4% | + 9.4% |
| 1979-1980 | +17.4% | +20.5% |
| 1980-1981 | +11.7% | +10.4% |
| 1981-1982 | - 7.5% | + 1.0% |
| 1982-1983 | - 7.5% | + 5.7% |
| 1983-1984* | +15.1% | +19.6% |
| 1979-1984 | + 5.8% | +13.9% |

* Planned

Source: Bank of Boston, Economics Department "The 1984 Outlook for Capital Spending Among New England Manufacturing Firms," February 1984; "The 1983 Outlook....," January 1983; "The 1982 Outlook....," March 1982.

Table 25

MANUFACTURING CAPACITY UTILIZATION RATES, AND PERCENT CHANGE, 1975-1981
UNITED STATES AND NEW ENGLAND COMPARISONS
(In Percent of Capacity Utilization)

| | United States | | New England | |
|---|---|---|---|---|
| | Rate | Change | Rate | Change |
| 1975 | 72.9 | | 73.9 | |
| 1976 | 79.5 | + 6.6 | 74.2 | + 0.3 |
| 1977 | 81.5 | + 2.0 | 74.2 | - 2.2 |
| 1978 | 84.4 | + 2.9 | 78.9 | + 6.9 |
| 1979 | 85.7 | + 1.3 | 80.1 | + 1.2 |
| 1980 | 79.0 | - 6.7 | 74.3 | - 5.8 |
| 1981 | 78.4 | - 0.6 | 75.2 | + 0.9 |
| 1982 | 71.1 | - 7.3 | 69.4 | - 5.8 |
| 1983 | 75.4 | + 4.3 | 73.0 | + 3.6 |

Source: Bank of Boston, "The 1984 Outlook for Capital Spending Among New England Manufacturing Firms," February 1984.

Structural Transformation in Massachusetts

A comparison of recent employment growth and change, by industry, in the nation and in Massachusetts highlight the favorable transformation of the state's economic structure. Relative to the nation, the state has a higher share of its employment in durable manufactures (including high technology industry) and the number of workers has grown at more than twice the national rate since 1976. See Table 26. In the case of services, the Massachusetts employment share is one-fourth larger and has grown as rapidly (by one-third since 1976).

Table 26

STRUCTURAL TRANSFORMATION AND EMPLOYMENT GROWTH,
IN THE UNITED STATES, MASSACHUSETTS, AND BOSTON,
1970-76-83

| | NUMBER OF EMPLOYEES IN THOUSANDS | | | | | PERCENT CHANGE | | PERCENT DISTRIBUTION | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1976 | 1983 | CHANGE 1970-76 | CHANGE 1976-83 | 1970-76 | 1976-83 | 1970 | 1976 | 1983 |
| | | | | | UNITED STATES | | | | | |
| TOTAL ALL SECTORS | 70,880 | 79,382 | 90,138 | 8,502 | 10,756 | 12.0 | 13.5 | 100.0 | 100.0 | 100.0 |
| MINING/CONSTRUCTION | 4,211 | 4,355 | 4,897 | 144 | 542 | 3.4 | 12.4 | 5.9 | 5.5 | 5.4 |
| MANUFACTURING | 19,367 | 18,997 | 18,497 | - 370 | - 500 | - 1.9 | - 2.6 | 27.3 | 23.9 | 20.5 |
| DURABLE GOODS | 11,208 | 11,077 | 10,774 | - 131 | - 303 | - 1.2 | - 2.7 | 15.8 | 14.0 | 12.0 |
| NONDURABLE GOODS | 8,159 | 7,920 | 7,723 | - 239 | - 197 | - 2.9 | - 2.5 | 11.5 | 10.0 | 8.6 |
| TRANSPORTATION/PU. | 4,515 | 4,582 | 4,958 | 67 | 376 | 1.5 | 8.2 | 6.4 | 5.8 | 5.5 |
| WHOLESALE/RETAIL TR | 15,040 | 17,755 | 20,804 | 2,715 | 3,049 | 18.1 | 17.2 | 21.2 | 22.4 | 23.1 |
| FINANCE/INS/RE. | 3,645 | 4,271 | 5,467 | 626 | 1,196 | 17.2 | 28.0 | 5.1 | 5.4 | 6.1 |
| SERVICES | 11,548 | 14,551 | 19,665 | 3,003 | 5,114 | 26.0 | 35.1 | 16.3 | 18.3 | 21.8 |
| GOVERNMENT | 12,554 | 14,871 | 15,850 | 2,317 | 979 | 18.5 | 6.6 | 17.7 | 18.7 | 17.6 |
| | | | | | MASSACHUSETTS | | | | | |
| TOTAL ALL SECTORS | 2,244 | 2,324 | 2,671 | 80 | 347 | 3.6 | 14.9 | 100.0 | 100.0 | 100.0 |
| MINING/CONSTRUCTION | 98 | 67 | 82 | - 31 | 15 | -31.6 | 22.4 | 4.4 | 2.9 | 3.1 |
| MANUFACTURING | 639 | 594 | 624 | - 45 | 30 | - 7.0 | 5.1 | 28.5 | 25.6 | 23.4 |
| DURABLE GOODS | 327 | 326 | 408 | - 1 | 82 | - 0.3 | 25.2 | 14.6 | 14.0 | 15.3 |
| NONDURABLE GOODS | 312 | 268 | 216 | - 44 | - 52 | -14.1 | -19.4 | 13.9 | 11.5 | 8.1 |
| TRANSPORTATION/PU. | 117 | 113 | 118 | - 4 | 5 | - 3.4 | 4.4 | 5.2 | 4.9 | 4.4 |
| WHOLESALE/RETAIL TR | 493 | 520 | 602 | 27 | 82 | 5.5 | 15.8 | 22.0 | 22.4 | 22.5 |
| FINANCE/INS/RE. | 127 | 138 | 170 | 11 | 32 | 8.7 | 23.2 | 5.7 | 5.9 | 6.4 |
| SERVICES | 450 | 516 | 706 | 66 | 190 | 14.7 | 36.8 | 20.1 | 22.2 | 26.4 |
| GOVERNMENT | 320 | 376 | 369 | 56 | - 7 | 17.5 | - 1.9 | 14.3 | 16.2 | 13.8 |
| | | | | | BOSTON METRO AREA | | | | | |
| TOTAL ALL SECTORS | 1,285 | 1,269 | 1,500 | - 16 | 231 | - 1.2 | 18.2 | 100.0 | 100.0 | 100.0 |
| MINING/CONSTRUCTION | 58 | 37 | 44 | - 21 | 7 | -36.2 | 18.9 | 4.5 | 2.9 | 2.9 |
| MANUFACTURING | 293 | 257 | 284 | - 36 | 27 | -12.3 | 10.5 | 22.8 | 20.3 | 18.9 |
| TRANSPORTATION/PU. | 77 | 68 | 71 | - 9 | 3 | -11.7 | 4.4 | 6.0 | 5.4 | 4.7 |
| WHOLESALE/RETAIL TR | 301 | 292 | 333 | - 9 | 41 | - 3.0 | 14.0 | 23.4 | 23.0 | 22.2 |
| FINANCE/INS/RE. | 94 | 94 | 119 | 0 | 25 | 0.0 | 26.6 | 7.3 | 7.4 | 7.9 |
| SERVICES | 273 | 327 | 465 | 54 | 138 | 19.8 | 42.2 | 21.2 | 25.8 | 31.0 |
| GOVERNMENT | 189 | 194 | 184 | 5 | - 10 | 2.6 | - 5.2 | 14.7 | 15.3 | 12.3 |

SOURCE: U.S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS. PREPARED BY BRA RESEARCH DEPARTMENT, OCTOBER 1984.